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(54) **COAXIAL WAVEGUIDE
MICROSTRUCTURES HAVING AN ACTIVE
DEVICE AND METHODS OF FORMATION
THEREOF**

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patent is extended or adjusted under 35
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This patent is subject to a terminal dis-
claimer.

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(58) **Field of Classification Search** 333/243,
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See application file for complete search history.

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(57) **ABSTRACT**

Provided are coaxial waveguide microstructures. The micro-
structures include a substrate and a coaxial waveguide dis-
posed above the substrate. The coaxial waveguide includes: a
center conductor; an outer conductor including one or more
walls, spaced apart from and disposed around the center con-
ductor; one or more dielectric support members for support-
ing the center conductor in contact with the center conductor
and enclosed within the outer conductor; and a core volume
between the center conductor and the outer conductor,
wherein the core volume is under vacuum or in a gas state.
Also provided are methods of forming coaxial waveguide
microstructures by a sequential build process and hermetic
packages which include a coaxial waveguide microstructure.

16 Claims, 18 Drawing Sheets

